

In the Garden.....The goal is to cover the entire plant, especially under the leaves. Typical application is two to five pounds per acre. Product application varies according to plant size. An examination of the leaves will tell if the leaf bottom is adequately covered.

One option is to water as usual, allow your plants to dry until the water doesn't run off then spray the D-21 in a dry application. This will allow the product to adhere to the leaves and provide even and complete coverage. Growing in different climate zones requires specialized care and water is not always readily supplied by rainfall. With careful observation of your garden you will discover the perfect time to apply D-21 to gain the most benefit.

Perma-Guard™ Effective on Field Crops too

D-21 Garden & Plant is licensed for use on field crops and in greenhouses and may be applied even on the day of harvest.

Crops: Asparagus, Beans, Broccoli, Brussels Sprouts, Cabbage, Cauliflower, Celery, Collard, Corn, Cotton, Cranberries, Eggplants, grains, Lettuce, Mustard Greens, Kale, Ornamentals, Pasture Grass, Peaches, Peanuts, Peas, Pecans, Peppers, Potatoes, Radishes, Soy Beans, Spinach, Tobacco



D-21 has been proven effective when used in a prescribed application program on the insects listed below;

Insects: Ants, Aphids, Army Worms, Asparagus Beetle, Blister Beetle, Boll Weevil, Bollworm, Cabbage Looper, Colorado Potato Beetle, Corn Earworm, Cross Striped Cabbage Worm, Cut Worms, Diamondback Caterpillar, Diamondback Moth Larvae, Fire Worms, Fleas, Flea Beetle, Green Peach Aphid, Harlequin Bug, Horn Worm, Imported Cabbage Worm, Leaf Tier, Leaf Hoppers, Mexican Bean Beetle, Midges, Mole Cricket, Pea Curculio, Peach Borer, Pecan Weevil, range Caterpillar, Stink Bug, Webworm, and White Fly.

Perma-Guard™ products are available in various sizes to accommodate the needs of any type of grower

D-21 and Earthworms

Diatoms are present to some degree in all soil. Diatomaceous Earth (DE) products applied directly to exposed earthworms will cause them to dehydrate. Worms below the ground in their own environment are protected and will actually digest and disperse clumps of DE into the soil .

**North Salt Lake, Utah 84054
Phone: (505) 243-1460
www.perma-guard.com**

Garden and Plant Protection Insecticide

D-21

all natural ingredients

PERMA-GUARD™

Pure Diatomaceous Earth Products





The Importance of Diatoms

All the waters of the earth are inhabited by billions upon billions of one celled plants called Diatoms. These are so tiny that one drop of water could contain thousands. These tiny plants are the food supply for all the higher forms of life in all the oceans and lakes of the world. These microscopic plants take the minerals from the water and build a protective shell.

As they die, the shells drift to the bottom of the lake or ocean and over millennia build up tremendous deposits that fossilize into a chalk-like material. These deposits are called **Diatomaceous Earth (DE)**. The deposits differ in that there are over 100,000 varieties of Diatoms. They have their own unique shape, and each deposit, depending upon conditions, may include various types of impurities mixed in with the shells. In some cases the deposits are merely made useless by this foreign material, but in others, it becomes dangerous. There may be, for example, an over abundance of arsenic in the deposit. Very rarely, deposits are formed under circumstances where there are virtually no impurities. Perma-Guard™'s DE is taken from

one of these rare, **fresh water** deposits and is so pure, just the way it comes from the ground, that Perma-Guard™ chose to use it as the base for its products.

The diatom is a tubular shape with tiny holes. The fossilized diatom is not water soluble. The edges of the tiny holes wear away the insect's protective cuticle causing body fluids to escape. The body fluids are then absorbed and the insect dehydrates. Human and animal cell walls are considerably thicker than an insect's cuticle and are not susceptible to this action.

Why add anything to our DE?

Some insects are better protected than others. Some may reproduce faster than the DE alone can inhibit the cycle and some are borers or stationary so **Perma-Guard™** produces a number of DE products mixed with Pyrethrum and Piperonyl Butoxide. The EPA has four classifications for insecticides. All Perma-Guard™ products are in category 4, the least toxic and that is the designation you will find on our labels.

There are no fumes, no residue, as with conventional insecticides. Insects must come in contact with the product to be killed.

EPA reg. no. 67197-3

Pyrethrum is an extract from a variety of Chrysanthemum flower (cinerariifolium.) commonly known as the African Daisy. It is an irritant to the insect which causes the insect to become active allowing the DE to work faster.



Piperonyl Butoxide (PBO) is an extract of the Sassafras plant and acts as a synergist. This causes the Pyrethrins to work more effectively and allows us to use less in our formula therefore keeping the cost to you lower.

In The Garden

Whether you plant in pots on your patio or in existing beds, insect control is usually a necessity. Protect all of your plants with **D-21**. It is gentle enough not to mar the beauty of any bloom yet strong enough to kill any insect that it comes in contact with. A light dusting on the top of the soil and underneath the pot will kill invading ants or insects that lay eggs in the soil. A fine dusting of the plant protects the blooms, leaves, fruit, or vegetable. While insect control is crucial to healthy vegetation, the



overall composition and health of the soil also plays a very important role in deterring pests.

